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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/784,624	02/23/2004	Lawrence Shungwei Mok	YOR920030206US1	8420

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EXAMINER

DUONG, THO V

ART UNIT	PAPER NUMBER
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3753

DATE MAILED: 08/25/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/784,624	MOK, LAWRENCE SHUNGWEI	
	Examiner	Art Unit	
	Tho v. Duong	3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2/23/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the claimed subject matter of “a spring force applied perpendicular to said interface of the lower surface of said beam” must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

The drawings are objected to because the reference number is not clear and some of the reference lines in figures 5 and 6, are left without any number. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The limitation of “the improvement comprising” renders the scope of the claim indefinite since the claims are under examination, it is not clear whether these structures are the improvement or not. Furthermore, it is not clear what the improvement is called, it appears to be a heat dissipating device. Regarding claims 7-9, the limitation of “heat pipe heat transfer through heat pipes” renders the scope of the claims indefinite since it is not clear whether applicant is claiming a main heat pipe and a plurality of heat pipes or just a single heat pipe having a plurality heat pipe inside of it. Regarding claim 8, the limitation of “a spring force applied perpendicular to said interface of the lower surface of said beam” renders the scope of the claim indefinite since it is not clear whether the spring force is an additional feature of the compliance enhancement listed in claim 6. There is no written description of the combination of the compliance includes the folding edges and the spring force element. Regarding claims 1 and 9, the claims use mean plus function format, it give rise to the interpretation under 35 USC 112, par. 6 in light of and consistent with the written description of the invention in the application. However, it is not clear which equivalent element(s) in the written description correspond to the “means for directing...between said side sheets”.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it

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pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 8 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter, which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The claimed subject matter of "a spring force applied perpendicular to said interface of the lower surface of said beam" in combination with the compliance of folding edges, are not supported by the original disclosure.

Claims 1-7 and 9 are further rejected as can be best understood by the examiner.

In view of the clarity issue of the spring force, the examiner is unable to determine whether claim 8 is new or inventive.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Gonner et al. (US 6,009,937). Gonner discloses (figures 1-7) a heat dissipating device comprising a least two parallel beam members (member 8, or spacer between grooves 6), each beam member positioned in thermal contact with a heat source; side sheets (3 or 13) of 1mm thick is thinner than the beam member; each of the side sheets (3,13) fastened along the edges of the beam; side walls (2b) are

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considered to read on the means for directing an ambient air coolant over the beam members; the sheets (3,13) are soldered to the beam members. Regarding claims 5-6, the structures of the folded edges of the sheets (U-shaped fold) inside the grooves and soldering material placed between the folded portion and the groove, which includes the lower surface of the beam (lower surface portion of the spacer between the groove), resemble the structures of the compliance as claimed.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gonner in view of Lee et al. (US 6,745,824). Gonner substantially discloses all of applicant's claimed invention as discussed above except for the limitation that a plurality of heat pipes entering through and exiting from the sheets. Lee discloses (figure 1) a heat dissipating device that has a plurality of heat pipes (30) entering through and exiting from the sheets (27) of the heat dissipating device for a purpose of attaining great heat removal capability for the heat dissipating device. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Lee's teaching in Gonner's heat dissipation device for a purpose of attaining great heat removal capability for the heat dissipating device.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gonner and Lee as applied to claims 7 above, and further in view of Liu (US 2003/0019610A1). Gonner and Lee

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substantially disclose all of applicant's claimed invention as discussed above except for the limitation that the heat dissipating device comprising a first level and a superimposed subsequent level. Liu discloses (figures 1,7 and paragraph 7) a heat dissipating device that has a first layer heat sink and a superimposed subsequent level wherein a plurality of heat pipes (2) are connected serially between the first and the second levels for a purpose of dissipating rapidly and efficiently heat from a heat source. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use Liu's teaching in the combination device of Gonner and Lee for a purpose of dissipating rapidly and efficiently heat from a heat source.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Jacoby (US5,771,966) discloses a folded conducting member heat sinks.

Mok (US 6,352,104) discloses a heat sink with enhanced heat spreading.

Chen et al. (US 6,394,175) discloses a top mounted cooling device using heat pipes.

Kinoshita et al. (US 6,324,061) discloses a heat sink having beam member between sheets.

Lee (US 6,176,304) discloses a heat sink.

Chen (US 6,776,224) discloses a heating dissipating device for electronic elements.

Gesklin et al. (US 6,244,332) discloses a heat sink comprises of folded fins.

Sasaki et al. (Us 6,742,573) discloses a heat sink including a heat dissipating fin.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tho v. Duong whose telephone number is 571-272-4793. The examiner can normally be reached on M-F (first Friday off).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Keasel Eric can be reached on 571-272-4929. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



TD
July 25, 2006



Tho v Duong
Primary Examiner
Art Unit 3753